

Taken from: "Foundations of Astronomy"
Seeds

To The Reader

You will approach retirement around the year 2040 and your children about 2065. Your grandchildren will not be retiring until almost 2100. You and your family will live through a century of exploration unlike any in the history of this planet. You will see explorers return to the moon, and your children could be the first colonists in lunar cities. Your grandchildren may reach Mars, mine the asteroid belt, explore the icy satellites of Jupiter and Saturn, or leave the solar system bound for the stars. A century ago the airplane had not been invented. Whatever humanity is like a century in the future, we can guess that it will be deeply involved in the exploration of the solar system. Astronomy, the study of the universe beyond the clouds, helps us understand what we will find when we leave earth.

Living in the next century might be enough justification for taking an astronomy course, but there are other reasons. The coming years will see tremendous advances in science and technology, advances that will confuse anyone not familiar with how science progresses from data to hypothesis to theory to natural law. Should your state permit nuclear waste disposal sites? Should you support construction of orbiting solar power stations? Should you give your children massive doses of vitamin C to combat colds? To resolve such technical issues, you need to apply some of the methods of science. Thus, as you study astronomy in the pages that follow, look at it as an example of scientific reasoning. Distinguish between data and theory, and notice how hypotheses are tested over and over.

Yet another reason for taking an astronomy course is to satisfy your natural curiosity. Having heard about black holes, the expanding universe, or the rings of Saturn, you may want to know more about them. Satisfying your own curiosity is the most noble reason for studying anything.

Curiosity might lead you to consider astronomy as a career, but you should know that the field is very small and jobs are hard to find. Instead, you might consider astronomy as a hobby—an activity for personal satisfaction

and enrichment. The magazines listed here will keep you up to date with the rapid advances in the field and will give you some ideas for further projects, such as telescope building and astronomical photography:

Astronomy, 411 East Mason St., P.O. Box 92788,
Milwaukee, WI 53202

The Griffith Observer, 2800 East Observatory Road, Los
Angeles, CA 90027

Mercury, Astronomical Society of the Pacific, 390
Ashton Ave., San Francisco, CA 94112.

The Planetary Report, The Planetary Society, 65 N.
Catalina Ave., Pasadena, CA 91106

Sky and Telescope, Sky Publishing Corporation, 49 Bay
State Rd., Cambridge, MA 02238

All these reasons for taking astronomy are reasonable, but the most important reason is astronomy's cultural value. The one reason you should study astronomy, the reason your school goes to the expense of teaching the course for you, is that astronomy tells you about your place in nature. It shows you our tiny planet spinning in space amid a vast cosmos of stars and galaxies. It takes you from the first moment of creation to the end of the universe. You will see our planet form, life develop, and our sun die. This knowledge has no monetary value, but it is priceless if you are to appreciate your existence as a human being.

Astronomy will change you. It will not just expand your horizons, it will do away with them. You will see humanity as part of a complex and beautiful universe. If by the end of this course you do not think of yourself and society differently, if you don't feel excited, challenged, and a bit frightened, then you haven't been paying attention.

Throughout this book, postage stamps appear as figures. If you enjoyed the stamps, you might like to begin your own collection of stamps related to astronomy or some other topic. For information about topical stamp collecting write to The American Topical Association, P.O. Box 630, Johnstown, PA 15907 or to The Astronomy Study Unit, c/o George Young, P.O. Box 632, Tewksbury, MA 01876.